NCBI PubMed National Library of Medicine

PubMed Nucleotide Protein Genome Structure at Taxonomy OMIM

Search PubMed for osteoprotegerin regulation Go Clear

Limits Preview/Index Hist Clipboard Details

About Entrez

Display Abstract Sort Save Text Clip Add Order

Entrez PubMed
Overview
Help | FAQ
Tutorial
New/Noteworthy

PubMed Services
Journal Browser
MeSH Browser
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
Cubby

Related Resources
Order Documents
NLM Gateway
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

Privacy Policy

Show: 20 Items 1-15 of 15 One page.

1: Curr Opin Lipidol 2001 Oct;12(5):555-60 Related Articles, Books, LinkOut

LWW Online

Recent advances in multifactorial regulation of vascular calcification.

Tintut Y, Demer LL.

Departments of Medicine and Physiology, UCLA School of Medicine, Los Angeles, California, USA.

Calcification presents important clinical implications in cardiovascular diseases, especially in coronary arteries. Epidemiological evidence has shown the coexistence of vascular calcification with both atherosclerosis and osteoporosis, and increasing evidence has shown the role of hyperlipidemia and atherogenic phospholipids in vascular calcification. The etiology of vascular calcification is also increasingly recognized as an active process. Vascular calcification initiates with matrix vesicle formation and mineralization following a process similar to that in bone. In addition, many bone regulatory factors have been shown to be present in calcified atherosclerotic lesions. In this review, we focus on the new developments emerging during the past year in regulation of vascular calcification. Regulatory factors include matrix GLA protein, the phosphate cotransporter Pit-1, a calcium-sensing receptor related factor, osteoprotegerin, leptin, bisphosphonates and oxidized lipids. Some of these, including oxidized lipids, osteoprotegerin, and bisphosphonates, appear to regulate mineralization in both bone and vasculature and may account for the co-existence of osteoporosis and atherosclerotic calcification that is independent of age.

PMID: 11561176 [PubMed - in process]

2: Endocrinology 2001 Sep;142(9):4047-54 Related Articles, Books, LinkOut

Full text article at endo.endojournals.org

Catabolic effects of continuous human PTH (1--38) in vivo is associated with sustained stimulation of RANKL and inhibition of osteoprotegerin and gene-associated bone formation.

Ma YL, Cain RL, Halladay DL, Yang X, Zeng Q, Miles RR, Chandrasekhar S, Martin TJ, Onyia JE.

Gene Regulation, Bone and Inflammation Research Division, Lilly Research Laboratories, Eli Lilly & Co., Indianapolis, Indiana 46285, USA. ma_linda@lilly.com

Continuous infusion of PTH in vivo results in active bone resorption. To investigate the molecular basis of the catabolic effect of PTH in vivo, we evaluated the role of OPG and RANKL, which are known to influence osteoclast formation and function. Weanling rats fed a calcium-free diet were parathyroidectomized and infused with PTH

PM3001395455

Source: https://www.industrydocuments.ucsf.edu/docs/hjpj0001

via an Alzet pump to examine: 1) the changes of serum-ionized calcium and osteoclast number, 2) the expression of OPG/RANKL mRNA and protein, and 3) the expression of osteoblast phenotype bone formation-associated genes such as osteoblast specific transcription factor, osteocalcin, bone sialoprotein, and type I collagen. PTH (1--38) (0.01--20 microg/100 g) continuous infusion for 1--24 h resulted in a dose-dependent increase in serum-ionized calcium in parathyroidectomized rats and a corresponding dose-dependent increase in osteoclast number, indicating an increased bone resorption. At 20 microg/100 g PTH dose level, serum-ionized calcium was 2.1-fold of the vehicle control and not different from the Sham-parathyroidectomized rats, and osteoclast number was 3-fold of the vehicle control and 1.7-fold of the Sham-parathyroidectomized rats. In the distal femur, RANKL mRNA expression was increased (27-fold) and OPG mRNA expression was decreased (4.6-fold). The changes in RANKL and OPG mRNA levels were rapid (as early as 1 h), dose dependent, and sustained over a 24-h period that was examined. Immunohistochemical evaluation of bone sections confirmed that OPG level was reduced in proximal tibial metaphysis upon PTH infusion. Circulating OPG protein level was also decreased by 32% when compared with the parathyroidectomized control. The expression of genes that mark the osteoblast phenotype was significantly decreased [osteoblast specific transcription factor (2.3-fold), osteocalcin (3-fold), bone sialoprotein (2.8-fold), and type I collagen (5-fold)]. These results suggest that the catabolic effect of PTH infusion in vivo in this well-established resorption model is associated with a reciprocal expression of OPG/RANKL and a co-ordinate decrease in the expression of bone formation-related genes. We propose that the rapid and sustained increase in RANKL and decrease in OPG initiate maintain and favor the cascade of events in the differentiation/recruitment and activation of osteoclasts.

PMID: 11517184 [PubMed - indexed for MEDLINE]

3: Curr Pharm Des 2001 May;7(8):613-35 Related Articles, Books, LinkOut

Osteoprotegerin: a physiological and pharmacological inhibitor of bone resorption.

Kostenuik PJ, Shalhoub V.

Department of Pharmacology/Pathology, Amgen, Inc, Thousand Oaks, CA 91320-1799, USA. paulk@amgen.com

OPG is a new member of the tumor necrosis factor (TNF) receptor family which plays a key role in the physiological regulation of osteoclastic bone resorption. The protein, which is produced by osteoblasts and marrow stromal cells, lacks a transmembrane domain and acts as a secreted decoy receptor which has no direct signaling capacity. OPG acts by binding to its natural ligand OPGL, which is also known as RANKL (receptor activator of NF-kappaB ligand). This binding prevents OPGL from activating its cognate receptor RANK, which is the osteoclast receptor vital for osteoclast differentiation, activation and survival. Overexpression of OPG in transgenic mice leads to profound osteopetrosis secondary to a near total lack of osteoclasts. Conversely, ablation of the OPG gene causes severe osteoporosis in mice. Ablation of OPGL or RANK also produces profound osteopetrosis, indicating the important physiological role of these proteins in regulating bone resorption. The secretion of OPG and OPGL from osteoblasts and stromal cells is regulated by numerous hormones and cytokines, often in a reciprocal manner. The relative levels of OPG and OPGL production are thought to ultimately dictate the extent of bone resorption. Excess OPGL increases bone resorption, whereas excess OPG inhibits resorption. Recombinant OPG blocks the effects of virtually all factors which stimulate osteoclasts, in vitro and in vivo. OPG also inhibits bone resorption in a variety of animal disease models, including ovariectomy-induced osteoporosis, humoral hypercalcemia of malignancy, and experimental bone metastasis. OPG might represent an effective therapeutic option for diseases associated with excessive osteoclast activity.

Publication Types:
- Review
- Review, tutorial

PMID: 11375772 [PubMed - indexed for MEDLINE]

PM3001395456

Source: https://www.industrydocuments.ucsf.edu/docs/hjpj0001

4: J Orthop Res 2000 Nov;18(6):967-76 Related Articles, Books, LinkOut

Osteoprotegerin inhibits tumor-induced osteoclastogenesis and bone tumor growth in osteopetrotic mice.

Clohisy DR, Ramnaraine ML, Scully S, Qi M, Van G, Tan HL, Lacey DL.

Department of Orthopaedic Surgery, University of Minnesota Medical School, and University of Minnesota Cancer Center, Minneapolis 55455, USA.
clohi001@tc.umn.edu

Osteoprotegerin and osteoprotegerin ligand have recently been identified as novel proteins that inhibit and stimulate, respectively, osteoclast formation. We examined the possibility that osteoprotegerin would inhibit cancer-induced osteoclastogenesis and cancer growth in bone. An experimental model was used in which osteolytic tumors are known to stimulate osteoclastogenesis and grow in femora of osteoclast-deficient mice (op/op). Osteoprotegerin treatment decreased the number of osteoclasts by 90% ($p < 0.0007$) at sites of tumor in a dose-dependent manner and decreased bone tumor area by greater than 90% ($p < 0.003$). The mechanisms through which osteoprotegerin decreased osteoclast formation in tumor-bearing animals included (a) an osteoprotegerin-mediated, systemic reduction in the number of splenic and bone marrow-residing osteoclast precursor cells, (b) a decrease in the number of osteoclast precursor cells at sites of tumor as detected by cathepsin K and receptor activator of NFkappaB mRNA expression, and (c) a decrease in osteoprotegerin ligand mRNA at sites of tumor. These findings suggest that osteoprotegerin treatment, in addition to having direct antagonistic effects on endogenous osteoprotegerin ligand, decreases the number of osteoclast precursors and reduces production of osteoprotegerin ligand at sites of osteolytic tumor.

PMID: 11192258 [PubMed - indexed for MEDLINE]

5: Crit Rev Eukaryot Gene Expr 2000;10(2):151-8 Related Articles, Books, LinkOut

Regulatory mechanisms in vascular calcification.

Bostrom K, Demer LL.

Department of Medicine and Physiology, UCLA School of Medicine, Los Angeles, CA 90095-1679, USA.

Vascular calcification is increasingly recognized as a significant contributor to cardiovascular morbidity and mortality as well as a biologically regulated process potentially subject to prevention and reversal. Both coronary and aortic calcification are common and influence plaque rupture, angioplasty and surgical complications, and compensatory enlargement. Aortic calcification increases aortic rigidity and contributes to cadiac ischemia, left ventricular hypertrophy, heart failure, and stroke. Calcification is also common in aortic valve leaflets further compounding adverse hemodynamic effects. Vascular calcification has often been attributed to "passive" crystallization. However, functional similarities between atherosclerotic lesions and bone contradict this view and indicate that it is no more "passive" than in embryonic bone formation or bone repair. Similarities include presence of all the major components of bone osteoid, bone regulatory factors, and subpopulations of artery wall cells that retain osteoblastic lineage potential. Several animal models for vascular calcification are available. Spontaneous vascular calcification occurs in null mice for matrix GLA protein (MGP), a small matrix protein of unknown function, and osteoprotegerin (OPG), known to modulate osteoclast differentiation. Vascular calcification may also be induced by feeding vitamin D and calcium or warfarin to normal animals, or by fat-feeding mice null for apoE or the LDL-receptor. Overall, regulation of vascular calcification is a growing field with surprising mechanisms and connections to other fields of biology.

Publication Types:

PM3001395457

Source: https://www.industrydocuments.ucsf.edu/docs/hjpj0001

- Review
- Review, academic

PMID: 11186330 [PubMed - indexed for MEDLINE]

6: Biochem Biophys Res Commun 2001 Feb 23;281(2):361-6 Related Articles, Books, LinkOut

Interleukin-18 up-regulates osteoprotegerin expression in stromal/osteoblastic cells.

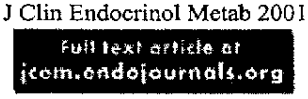
Makiishi-Shimobayashi C, Tsujimura T, Iwasaki T, Yamada N, Sugihara A, Okamura H, Hayashi S, Terada N.

Department of Pathology, Hyogo College of Medicine, Nishinomiya, Hyogo, Japan.

Osteoprotegerin (OPG) and osteoclast differentiation factor (ODF) are crucial regulators of osteoclastogenesis. To determine the biological role of interleukin (IL)-18 produced by stromal/osteoblastic cells in osteoclastogenesis, we examined the effects of IL-18 on the OPG and ODF mRNA levels in these cells. When bone marrow stromal ST2 cells, osteoblastic MC3T3-E1 cells, and mouse calvarial osteoblasts were stimulated with IL-18, the expression of OPG mRNA, but not ODF mRNA, was transiently increased, its expression reaching a maximal level at 3 h after the beginning of the culture. In accordance with this observation, all these cells expressed the mRNAs of two IL-18 receptor components and MyD88, an adapter molecule involved in IL-18 signaling. Moreover, in these cells, mitogen-activated protein kinase was phosphorylated after stimulation with IL-18. These results suggest that stromal/osteoblastic cells are IL-18-responsive cells and that IL-18 may inhibit osteoclastogenesis by up-regulating OPG expression, without stimulation of ODF production, in stromal/osteoblastic cells. Copyright 2001 Academic Press.

PMID: 11181055 [PubMed - indexed for MEDLINE]

7: J Clin Endocrinol Metab 2001 Feb;86(2):631-7 Related Articles, Books, LinkOut



Associations of serum osteoprotegerin levels with diabetes, stroke, bone density, fractures, and mortality in elderly women.

Browner WS, Lui LY, Cummings SR.

General Internal Medicine Section, San Francisco Veterans Affairs Medical Center, University of California, San Francisco, California 94143, USA. warren@cooper.cpmc.org

Osteoprotegerin (OPG) and its ligand are cytokines that regulate osteoclastogenesis and that may be involved in the regulation of vascular calcification. We examined whether serum OPG levels were associated with stroke, mortality, and cardiovascular risk factors, including diabetes, as well as with bone mineral density and fractures in a sample of 490 participants in a prospective cohort of white women, at least 65 yr of age. We found that OPG levels, assayed blinded from serum obtained at baseline, were about 30% greater in women with diabetes (mean +/- SD, 0.30 +/- 0.17 ng/mL) than in those without diabetes (0.23 +/- 0.10 ng/mL; P = 0.0001). OPG levels were associated with all-cause mortality [age-adjusted odds ratio, 1.4/SD (0.11 ng/mL) increase in serum OPG level; 95% confidence interval, 1.2--1.8] and cardiovascular mortality (odds ratio, 1.4; 95% confidence interval, 1.1--1.8); these effects were not confounded by diabetes. OPG levels were not associated with baseline bone mineral density or with subsequent strokes or fractures. The association of serum OPG levels with diabetes and with cardiovascular mortality raises the possibility that OPG may be a cause of or a

PM3001395458

Source: https://www.industrydocuments.ucsf.edu/docs/hjpj0001

marker for vascular calcification.

PMID: 11158021 [PubMed - indexed for MEDLINE]

8: J Biol Chem 2001 Mar 30;276(13):10119-25 Related Articles, Books, LinkOut

Full text article at www.jbc.org

Transcriptional mechanisms of bone morphogenetic protein-induced osteoprotegrin gene expression.

Wan M, Shi X, Feng X, Cao X.

Department of Pathology, University of Alabama at Birmingham, 35294, USA.

Osteoprotegerin (OPG), an osteoblast-secreted decoy receptor, specifically binds to osteoclast differentiation factor and inhibits osteoclast maturation. Members of the transforming growth factor-beta superfamily including bone morphogenetic proteins (BMPs) stimulate OPG mRNA expression. In this study, we have characterized the transcription mechanism of BMP-induced OPG gene expression. Transfection of Smad1 and a constitutively active BMP type IA receptor ALK3 (Q233) stimulated the OPG promoter. Deletion analysis of the OPG promoter identified two Hoxc-8 binding sites that respond to BMP stimulation. Glutathione S-transferase-Hoxc-8 protein binds to these two Hox sites specifically. Consistent with the transfection results of the native promoter, ALK3 or Smad1 linker region, which interacts with Hoxc-8, stimulated the activation of the reporter construct with the two Hox sites. Overexpression of Hoxc-8 inhibited the induced promoter activity. When the two Hox binding sites were mutated, ALK3 or Smad1 linker region no longer activated the transcription. Importantly, Smad1 linker region induced both OPG promoter activity and endogenous OPG protein expression in 2T3 osteoblastic cells. The medium from cells transfected with Smad1 linker region expression plasmid effectively inhibited osteoclastogenesis. Collectively, our data indicate that Hox sites mediate both OPG promoter construct activity and endogenous OPG gene expression in response to BMP stimulation.

PMID: 11139569 [PubMed - indexed for MEDLINE]

9: J Clin Invest 2000 Nov;106(10):1203-4 Related Articles, Books, LinkOut

Comment on:
- J Clin Invest. 2000 Nov;106(10):1229-37

FREE full text article at www.jci.org

The mechanisms of estrogen regulation of bone resorption.

Riggs BL.

Endocrine Research Unit, Mayo Clinic and Foundation, Rochester, Minnesota 55905, USA. riggs.lawrence@mayo.edu

Publication Types:
- Comment
- Review
- Review, tutorial

PMID: 11086020 [PubMed - indexed for MEDLINE]

10: J Biol Chem 2000 Jul 14;275(28):20959-62 Related Articles, Books, LinkOut

PM3001395459

Source: https://www.industrydocuments.ucsf.edu/docs/hjpj0001

FREE full text article at www.jbc.org

Osteoprotegerin is an alpha vbeta 3-induced, NF-kappa B-dependent survival factor for endothelial cells.

Malyankar UM, Scatena M, Suchland KL, Yun TJ, Clark EA, Giachelli CM.

Departments of Bioengineering and Immunology, University of Washington, Seattle, Washington 98195, USA.

Osteopontin protects endothelial cells from apoptosis induced by growth factor withdrawal. This interaction is mediated by the alpha(v)beta(3) integrin and is NF-kappaB-dependent (Scatena, M., Almeida, M., Chaisson, M. L., Fausto, N., Nicosia, R. F., and Giachelli, C. M. (1998) J. Cell Biol. 141, 1083-1093). In the present study we used differential cloning to identify osteopontin-induced, NF-kappaB-dependent genes in endothelial cells. One of the genes identified in this screen was osteoprotegerin, a member of the tumor necrosis factor receptor superfamily. By Northern and Western blot analysis, osteoprotegerin mRNA and protein levels were very low in endothelial cells plated on the non-integrin cell attachment factor, poly-d-lysine. In contrast, osteoprotegerin mRNA and protein levels were induced 5-7-fold following alpha(v)beta (3) ligation by osteopontin. Osteoprotegerin induction by osteopontin was time-dependent and observed as early as 3 h following treatment. NF-kappaB inactivation achieved by over expression of an IkappaB super repressor in endothelial cells completely inhibited osteoprotegerin induction by osteopontin. Finally, purified osteoprotegerin protected endothelial cells with inactive NF-kappaB from apoptosis induced by growth factor deprivation. These data suggest that alpha(v)beta(3)-mediated endothelial survival depends on osteoprotegerin induction by NF-kappaB and indicate a new function for osteoprotegerin in endothelial cells.

PMID: 10811631 [PubMed - indexed for MEDLINE]

11: J Endocrinol 1998 Oct;159(1):191-5 Related Articles, Books, LinkOut

JOE Online

Osteoprotegerin mRNA is expressed in primary human osteoblast-like cells: down-regulation by glucocorticoids.

Vidal NO, Brandstrom H, Jonsson KB, Ohlsson C.

Research Centre for Endocrinology and Metabolism, Department of Internal Medicine, Sahlgrenska University Hospital, Gothenburg, Sweden.

Osteoprotegerin (OPG) is a recently cloned member of the tumour necrosis factor receptor family. It has been suggested that this secreted glycoprotein acts as an inhibitor of osteoclastic differentiation. Expression of OPG has previously been demonstrated in a number of tissues. However, it is still unclear whether or not OPG is expressed by human osteoblasts. We have used the RNase protection assay to demonstrate the OPG transcript in primary cultured human osteoblast-like cells, human marrow stroma cells and osteosarcoma cell lines. Furthermore, we have studied the effect of glucocorticoids on OPG mRNA levels in these cells. We demonstrate that glucocorticoids decrease the OPG transcript in a dose- and time-dependent manner. The time-course study reveals that hydrocortisone (10(-6) M) decreases OPG mRNA levels within 2 h. This decrease is transient, reaching control levels again after 24 h. Our findings demonstrate that human osteoblasts express the mRNA corresponding to OPG, an inhibitor of osteoclast differentiation. The finding that OPG mRNA levels are decreased by glucocorticoids indicates that a reduced production of OPG from osteoblasts and/or marrow stroma cells could, in part, explain glucocorticoid-induced bone resorption.

PMID: 9795357 [PubMed - indexed for MEDLINE]

PM3001395460

Source: https://www.industrydocuments.ucsf.edu/docs/hjpj0001

12: Biochem Biophys Res Commun 1998 Jul 30;248(3):696-700 Related Articles, Books, LinkOut

Osteoprotegerin mRNA is increased by interleukin-1 alpha in the human osteosarcoma cell line MG-63 and in human osteoblast-like cells.

Vidal ON, Sjogren K, Eriksson BI, Ljunggren O, Ohlsson C.

Endocrine Bone Unit, Sahlgrenska University Hospital, Gothenburg, Sweden.

Osteoprotegerin (OPG) is a soluble receptor for the Osteoprotegerin-Ligand (OPGL) which is expressed on osteoblasts and mediates the signal for osteoclast differentiation. In the present study we demonstrate that OPG mRNA levels in MG-63 cells are increased in a dose-dependent manner after 8 h of treatment with IL-1 alpha (338 +/- 53% over control at 25 U/ml). Interleukin-6 (IL-6), under similar culture conditions, does not affect OPG mRNA levels. Time-course studies show that IL-1 alpha (25 U/ml) causes a transient increase of OPG mRNA levels in MG-63 cells, peaking after 4 h of treatment. An increase of the OPG transcript occurs in hOB cells at 0.5 h which is still present after 24 h of IL-1 alpha treatment. In MG-63 cells neither basal-nor IL-1 alpha-induced OPG mRNA levels are altered by the translational inhibitor cycloheximide. These results suggest that expression of OPG in osteoblasts may be regulated by IL-1 alpha.

PMID: 9703989 [PubMed - indexed for MEDLINE]

13: Biochem Biophys Res Commun 1998 Jul 30;248(3):454-7 Related Articles, Books, LinkOut

Tumor necrosis factor-alpha and -beta upregulate the levels of osteoprotegerin mRNA in human osteosarcoma MG-63 cells.

Brandstrom H, Jonsson KB, Vidal O, Ljunghall S, Ohlsson C, Ljunggren O.

Department of Medical Sciences, University of Uppsala, Sweden.
Helena.Brandstrom@medicin.uu.se

Osteoprotegerin (OPG) is a recently cloned soluble member of the tumor necrosis factor receptor family. OPG has been shown to inhibit osteoclast recruitment by binding to OPG-ligand, an osteoclast differentiating factor on osteoblastic stromal cells, thereby blocking osteoclastogenesis. In this report we have examined the effect of tumor necrosis factor-alpha (TNF-alpha) and tumor necrosis factor-beta (TNF-beta) on OPG mRNA levels in the human osteosarcoma cell line MG-63. We demonstrate that both TNF-alpha and TNF-beta dose- and time-dependently upregulate the mRNA levels of OPG. The effect is significant at and above 5 pM of TNF-alpha and 1 pM of TNF-beta. The stimulatory effect on OPG mRNA levels in MG-63 cells was detected after 2 hrs of incubation with TNF-alpha or TNF-beta. These data demonstrate that the expression of OPG in osteoblasts, with subsequent effects on osteoclastogenesis, is regulated by TNFs.

PMID: 9703945 [PubMed - indexed for MEDLINE]

14: Biochem Biophys Res Commun 1998 Jun 18;247(2):338-41 Related Articles, Books, LinkOut

Regulation of osteoprotegerin mRNA levels by prostaglandin E2 in

PM3001395461

Source: https://www.industrydocuments.ucsf.edu/docs/hjpj0001

human bone marrow stroma cells.

Brandstrom H, Jonsson KB, Ohlsson C, Vidal O, Ljunghall S, Ljunggren O.

Department of Internal Medicine, University of Uppsala, Uppsala, S-751 85, Sweden.

The recently cloned osteoclastogenesis inhibitory factor, or osteoprotegerin (OPG), has been shown to be a potent inhibitor of osteoclast formation. The inhibition is believed to be mediated through specific binding of OPG to a cell surface ligand on osteoblastic stromal cells. In this report we have studied the effect of the bone resorbing agent prostaglandin E2 (PGE2) on OPG mRNA levels in primary cultures of human bone marrow stroma cells (hBMSC). PGE2 dose- and time-dependently down-regulated the mRNA levels of OPG, as measured by RNAse protection assay. After 4 hours of stimulation with 1 microM PGE2, OPG mRNA levels were significantly decreased. The inhibitory effect was seen at and above 1 nM of PGE2. To elucidate whether the OPG mRNA levels are regulated via the proteinkinase A and/or the proteinkinase C pathways we stimulated cells with either forskolin (FSK) or phorbolic ester (PDbu) respectively. FSK (10 microM) decreased OPG mRNA levels to 50 % of control, whereas PE (10 nM) upregulated the mRNA levels to 250 % of control. These data show that PGE2 down-regulates the expression of OPG mRNA in hBMSC, probably via an increase in cAMP. This mechanism might be involved in PGE2-induced bone resorption.
Copyright 1998 Academic Press.

PMID: 9642127 [PubMed - indexed for MEDLINE]

15: Genes Dev 1998 May 1;12(9):1260-8 Related Articles, OMIM, Books, LinkOut

FREE full text article at www.genesdev.org

osteoprotegerin-deficient mice develop early onset osteoporosis and arterial calcification.

Bucay N, Sarosi I, Dunstan CR, Morony S, Tarpley J, Capparelli C, Scully S, Tan HL, Xu W, Lacey DL, Boyle WJ, Simonet WS.

Department of Molecular Genetics, Amgen, Inc., Thousand Oaks, California 91320-1789, USA.

Osteoprotegerin (OPG) is a secreted protein that inhibits osteoclast formation. In this study the physiological role of OPG is investigated by generating OPG-deficient mice. Adolescent and adult OPG-/- mice exhibit a decrease in total bone density characterized by severe trabecular and cortical bone porosity, marked thinning of the parietal bones of the skull, and a high incidence of fractures. These findings demonstrate that OPG is a critical regulator of postnatal bone mass. Unexpectedly, OPG-deficient mice also exhibit medial calcification of the aorta and renal arteries, suggesting that regulation of OPG, its signaling pathway, or its ligand(s) may play a role in the long observed association between osteoporosis and vascular calcification.

PMID: 9573043 [PubMed - indexed for MEDLINE]

Display Abstract Sort Send to Text Clip Add Order

Show: 20 Items 1-15 of 15 One page.

Write to the Help Desk
NCBI | NLM | NIH
Department of Health & Human Services
Freedom of Information Act | Disclaimer

-parc-sun-solaris2.8 (debug) Oct 9 2001 16:44:54

PM3001395462

Source: https://www.industrydocuments.ucsf.edu/docs/hjpj0001